

# Best Practice

## CLINICAL EVIDENCE

### Chronic prostatitis

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#### Questions

- Effects of treatments for chronic bacterial prostatitis
- Effects of treatments for chronic abacterial prostatitis

#### Interventions

##### CHRONIC BACTERIAL PROSTATITIS

###### Likely to be beneficial

- Antimicrobial drugs
- Alpha blockers

###### Unknown effectiveness

- Local injection of antimicrobial agents
- Transurethral resection
- Radical prostatectomy

##### CHRONIC ABACTERIAL PROSTATITIS

###### Likely to be beneficial

- Alpha blockers

###### Unknown effectiveness

- Transurethral microwave thermotherapy
- Prostatic massage
- Sitz baths
- Biofeedback
- Allopurinol

#### DEFINITION

Chronic bacterial prostatitis is characterized by a culture of expressed prostatic secretions that is positive for pathogens. It can be symptomatic—recurrent urinary tract infection or suprapubic, lower back, or perineal pain—asymptomatic, or associated with minimal urgency, frequency, and dysuria. Chronic abacterial prostatitis is characterized by pelvic or perineal pain, often associated with urinary urgency, nocturia, weak urinary stream, frequency, dysuria, hesitancy, dribbling after micturition, interrupted flow, and inflammation (white blood cells) in prostatic secretions. Symptoms can also include suprapubic, scrotal, testicular, penile, or lower back pain or discomfort,

(known as prostatodynia) in the absence of inflammation in prostatic secretions.

#### INCIDENCE AND/OR PREVALENCE

A community-based study estimated that 9% of men have a diagnosis of chronic prostatitis at any one time.<sup>1</sup> Another study found that, of men with genitourinary symptoms, 8% presenting to urologists and 1% presenting to primary care physicians are diagnosed as having chronic prostatitis.<sup>2</sup> Most cases of chronic prostatitis are abacterial. Acute bacterial prostatitis, although easy to diagnose and treat, is rare.

#### ETIOLOGY

Organisms commonly implicated in bacterial prostatitis include *Escherichia coli*, other Gram-negative Enterobacteriaceae, occasionally *Pseudomonas* species, and rarely, Gram-positive enterococci. The cause of abacterial prostatitis is unclear, but autoimmunity may be involved.<sup>3</sup>

#### PROGNOSIS

In a 1996 study, chronic abacterial prostatitis had an effect on quality of life similar to that from angina, Crohn disease, or a myocardial infarction.<sup>4</sup>

#### AIMS

Treatment goals are to relieve symptoms and eliminate infection where present, with minimum adverse effects, as measured by decreased symptoms (improved symptom scores or bother scores) and improved quality of life, urodynamics, and rates of bacteriologic cure (clearance of previously recorded organisms from prostatic secretions).

#### METHODS

We searched MEDLINE to July 1998. A full *Clinical Evidence* search and appraisal was performed in June 1999. No systematic reviews were identified. We reviewed all relevant randomized controlled trials (RCTs) identified.

## Summary points

### In men with chronic bacterial prostatitis

- Antimicrobial drugs have not been adequately evaluated. Retrospective cohort studies report cure rates of 0% to 90%, depending on the drug used and the duration of treatment. The limited evidence available suggests that quinolones are more effective than the combination of trimethoprim and sulfamethoxazole
- The local injection of antimicrobial agents is not more effective than oral or parenteral antimicrobial treatment
- Limited evidence from one randomized controlled trial suggests that adding alpha blockers to antimicrobial treatment may improve outcome and reduce recurrence
- Transurethral resection and radical prostatectomy have not yet been adequately evaluated. Limited evidence suggests that transurethral resection may cure some cases of refractory, chronic bacterial prostatitis

### In men with chronic abacterial prostatitis

- Limited evidence that alpha blockers may lessen symptoms
- Thermotherapy, prostatic massage, sitz baths, and biofeedback have not yet been formally evaluated

**QUESTION:** What are the effects of treatments for chronic bacterial prostatitis?

## OPTION: ANTIMICROBIAL DRUGS

### Summary

Antimicrobial drugs have not been adequately evaluated in men with chronic bacterial prostatitis. Retrospective cohort studies report cure rates (clearing prostatic secretions of previously recorded organisms) of 0% to 90%, depending on the drug used and the duration of treatment. The limited evidence available suggests that quinolones are more effective than trimethoprim-sulfamethoxazole.

### Benefits

Trimethoprim-sulfamethoxazole: We found no systematic review and no RCTs. A nonsystematic review identified 10 retrospective cohort studies involving 135 men with bacteriologically confirmed prostatitis treated with trimethoprim-sulfamethoxazole, 160 mg/800 mg twice a day for 10 to 140 days.<sup>5</sup> The studies reported bacteriologic cure rates of 0% to 67%. More than 30% of men were cured when treated for at least 90 days.

Quinolones: We found no systematic review or RCTs. A review summarized three retrospective cohort studies involving 106 men treated with norfloxacin, 400 mg twice a day for 10, 28, and 174 days.<sup>6</sup> The studies reported cure

rates of 64% to 88%. We also found six retrospective cohort studies involving 141 men treated with ciprofloxacin, 250 to 500 mg twice a day for 14 to 259 days, with cure rates of 60% to 75%.

Amoxicillin and clavulanate potassium (combination product) and clindamycin hydrochloride: We found no systematic review and no RCTs. One cohort study included 50 men whose bacterial pathogens were resistant to empiric treatment with quinolone. The expressed prostatic secretions from 24 of these men showed high colony counts of Gram-positive and Gram-negative anaerobic bacteria either alone (18 men) or in combination with aerobic bacteria (6 men). After treatment with either amoxicillin-clavulanate or clindamycin hydrochloride for 3 to 6 weeks, all patients had a decrease or total elimination of symptoms, and no anaerobic bacteria were detected in prostatic secretions.<sup>7</sup>

### Harms

The studies of trimethoprim-sulfamethoxazole did not report adverse effects. In the other studies, toxic effects from quinolones were rare. Late relapse (6-12 months after treatment) was common.

### Comment

Higher cure rates with quinolones may be explained by greater penetration into the prostate.<sup>8</sup> We reviewed only studies that used standard methods to localize infection to the prostate.<sup>9</sup>

## OPTION: LOCAL INJECTION OF ANTIMICROBIALS

### Summary

We found no good evidence that the local injection of antimicrobial agents is more effective than oral or parenteral antimicrobial treatment.

### Benefits

We found no systematic review and no RCTs. In one small cohort study of 24 men with refractory chronic bacterial prostatitis, eradication of infection was eventually achieved after an unstated period in 15 men with a regimen of gentamicin sulfate (160 mg) plus cefazolin sodium (3 g) administered directly into the prostate through the perineum.<sup>10</sup>

### Harms

Although not reported in this study, infection is a possible risk of this invasive procedure.

### Comment

None.

## OPTION: ALPHA BLOCKERS

### Summary

Limited evidence from one RCT suggests that adding alpha blockers to antimicrobial treatment may improve

outcome and reduce recurrence in men with chronic bacterial prostatitis.

### Benefits

We found no systematic review. We found one RCT of alpha blockers (terazosin, either 1-2 or 2.5 mg daily, or alfuzosin, 2.5 mg once or twice a day) in 270 men with bacterial or abacterial prostatitis or prostatodynia.<sup>11</sup> Antimicrobials were given to all men with culture of expressed prostatic secretions that were positive for pathogens and to half of those with inflammatory expressed prostatic secretions. Of men with bacterial prostatitis, those given alpha blockers and antimicrobials had significantly higher rates of clinical improvement and significantly lower rates of recurrence (assessed by culture of expressed prostatic secretions) than those given antimicrobials alone ( $P = 0.02$ , with no relative risk or confidence interval given).

### Harms

No adverse effects of alpha blockers were reported in this study.<sup>11</sup>

### Comment

None.

## OPTION: TRANSURETHRAL RESECTION

### Summary

We found insufficient evidence on the effects of transurethral resection of the prostate in men with chronic bacterial prostatitis. Limited evidence from one retrospective cohort study suggests that it may cure some men with refractory chronic bacterial prostatitis.

### Benefits

We found no systematic review, RCTs, or prospective cohort studies. One retrospective cohort study reported 40% to 50% cure rates in 50 men with chronic prostatitis treated with transurethral resection. However, proof of bacterial prostatitis in many of the men was not shown.<sup>12</sup>

### Harms

Long-term morbidity from transurethral resection is low. In a trial of men with benign prostatic hypertrophy, no difference was found in the incidence of impotence or urinary incontinence with transurethral resection or watchful waiting.<sup>13</sup>

### Comment

Bigger studies are needed to identify the true risk of urinary incontinence after transurethral resection.

## OPTION: RADICAL PROSTATECTOMY

### Summary

Radical prostatectomy is a treatment of last resort. Its use in men with chronic prostatitis has not been formally evaluated.

### Benefits

We found no RCTs. We found one report of radical prostatectomy in two young men whose refractory bacterial prostatitis caused relapsing hemolytic crises.<sup>14</sup>

### Harms

Radical prostatectomy can cause impotence (9%-75%, depending on age)<sup>15</sup> and varying degrees of urinary stress incontinence (8%).<sup>16</sup>

### Comment

None.

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**QUESTION:** What are the effects of treatments for chronic abacterial prostatitis?

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## OPTION: ALPHA BLOCKERS

### Summary

Limited evidence from one RCT suggests that alpha blockers may relieve symptoms in men with nonbacterial prostatitis.

### Benefits

We found no systematic review. We found one RCT of the use of alpha blockers (terazosin, either 1-2 or 2.5 mg daily, or alfuzosin, 2.5 mg once or twice a day) in 270 men with bacterial or abacterial prostatitis or prostatodynia.<sup>11</sup> Antimicrobial agents were given to all men with a culture of expressed prostatic secretions that was positive for pathogens and to half of those with inflammatory expressed prostatic secretions. Of men with abacterial prostatitis, those given alpha blockers had significantly lower rates of symptomatic recurrence than those given either no treatment or antimicrobials ( $P < 0.001$ , with no relative risk or confidence interval given).

### Harms

No adverse effects of alpha blockers were reported.<sup>11</sup>

### Comment

None.

## OPTION: TRANSURETHRAL MICROWAVE THERMOTHERAPY

### Summary

We found insufficient evidence of the effects of thermotherapy in abacterial prostatitis. One small RCT found that it relieved symptoms.

## Benefits

We found no systematic review. We found one RCT comparing transurethral microwave thermotherapy with sham treatment in 20 men.<sup>17</sup> Participants were assessed blindly using a symptom severity index and symptom frequency questionnaire. Seven of 10 men in the treatment group improved significantly during a mean of 21 months' follow up compared with 1 of the 10 men in the group receiving sham treatment.

## Harms

Four men had transient (resolved in 3 weeks) adverse reactions, including hematuria (two men), urinary tract infection, impotence, urinary retention, urinary incontinence, and premature ejaculation; all occurred in one man each, except for hematuria.<sup>17</sup>

## Comment

The trial measured only changes in clinical symptoms to determine efficacy. Thermotherapy caused persistent elevation of leukocyte counts in the prostatic fluid, which could indicate tissue damage.

## OPTION: ALLOPURINOL

### Summary

We found no good evidence of the effects of allopurinol in men with chronic abacterial prostatitis.

### Benefits

We found one systemic review, which identified one RCT.<sup>18</sup> Fifty-four men were initially enrolled in the study and divided into three groups: one group was treated with allopurinol, 600 mg daily; one group was treated with allopurinol, 300 mg daily; and one group was given placebo. Thirty-four men completed the study, which lasted 240 days. There was a significant effect of allopurinol on urate concentrations in expressed prostatic secretions; men in treatment groups had a lower ratio of urate to creatinine in their expressed prostatic secretions than did the placebo group. Moreover, the degree of discomfort score was lower among the groups receiving allopurinol than the group given placebo ( $P = 0.02$ ).

### Harms

No men receiving allopurinol reported any significant adverse effects.

### Comment

From the data presented, it is not clear that the decreases in urate concentration in expressed prostatic secretion led directly to symptom relief. Moreover, the symptom score was not validated.<sup>18</sup>

## OPTION: OTHER INTERVENTIONS

### Summary

Prostatic massage, sitz baths, and biofeedback (training the patient to contract and relax the pelvic floor muscles to interrupt the attacks of myofascial pain) have not yet been formally evaluated in men with nonbacterial prostatitis.

### Benefits

We found no systematic review or RCTs.

### Harms

Insufficient data.

### Comment

None.

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